

FCC PART 15.407

TEST REPORT

For

SZ DJI TECHNOLOGY CO., LTD

14th floor, West Wing, Skyworth Semiconductor Design Building NO.18 Gaoxin South 4th Ave,
Nanshan, Shenzhen, Guangdong, China

FCC ID: SS3-MG1P1801

Report Type: Original Report	Equipment Type: Aircraft
Report Number:	RDG180101004-00B
Report Date:	2018-02-06
Reviewed By:	Jerry Zhang EMC Manager <i>Jerry Zhang</i>
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
MEASUREMENT UNCERTAINTY	5
TEST FACILITY	5
SYSTEM TEST CONFIGURATION.....	6
DESCRIPTION OF TEST CONFIGURATION	6
EQUIPMENT MODIFICATIONS	6
EUT EXERCISE SOFTWARE	6
BLOCK DIAGRAM OF TEST SETUP	8
SUMMARY OF TEST RESULTS	9
FCC §15.407 (f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)	10
APPLICABLE STANDARD	10
FCC §15.203 - ANTENNA REQUIREMENT.....	11
APPLICABLE STANDARD	11
ANTENNA CONNECTOR CONSTRUCTION	11
FCC §15.209, §15.205 , §15.407(b)–UNWANTED EMISSION.....	12
APPLICABLE STANDARD	12
EUT SETUP	13
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	14
TEST PROCEDURE	14
CORRECTED AMPLITUDE & MARGIN CALCULATION	14
TEST EQUIPMENT LIST AND DETAILS.....	15
TEST DATA	15
FCC §15.407(a) §6.2– EMISSION BANDWIDTH	26
APPLICABLE STANDARD	26
TEST EQUIPMENT LIST AND DETAILS.....	26
TEST PROCEDURE	26
TEST DATA	26
FCC §15.407(a)– MAXIMUM CONDUCTED OUTPUT POWER.....	34
APPLICABLE STANDARD	34
TEST EQUIPMENT LIST AND DETAILS.....	35
TEST PROCEDURE	35
TEST DATA	35
FCC §15.407(a) - POWER SPECTRAL DENSITY	37
APPLICABLE STANDARD	37
TEST PROCEDURE	38
TEST EQUIPMENT LIST AND DETAILS.....	38
TEST DATA	38
FCC §15.407(b) – OUT- OF-BAND EMISSIONS.....	46
APPLICABLE STANDARD	46
TEST PROCEDURE	46

TEST EQUIPMENT LIST AND DETAILS.....	47
TEST DATA	47
FCC §15.407(g) – FREQUENCY STABILITY.....	52
APPLICABLE STANDARD	52
TEST PROCEDURE	52
TEST EQUIPMENT LIST AND DETAILS.....	52
TEST DATA	52

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	MG-1P RTK; MG-1P
EUT Model:	3WWDSZ-10017(product name MG-1P RTK) 3WWDSZ-10016(product name MG-1P)
Equipment Type:	Aircraft
FCC ID:	SS3-MG1P1801
Rated Input Voltage:	DC 44.4V from rechargeable battery
External Dimension:	78 cm (L) x 78 cm (W) x 61.6 cm (H) for MG-1P RTK; 78 cm (L) x 78 cm (W) x 57.8 cm (H) for MG-1P;
Serial Number:	180101004
EUT Received Date:	2018.01.01

Note: The series product, model 3WWDSZ-10017, 3WWDSZ-10016 are electrically identical, we selected 3WWDSZ-10017 for fully testing, the details of the difference them was explained in the attached declaration letter.

Objective

This type approval report is prepared on behalf of **SZ DJI TECHNOLOGY CO., LTD** in accordance with Part 2-Subpart J, Part 15-Subparts A and E of the Federal Communications Commission's rules.

The tests were performed in order to determine compliance with FCC Rules Part 15, Subpart E, section 15.203, 15.205, 15.209 and 15.407 rules.

Related Submittal(s)/Grant(s)

FCC submissions with Part 15C DTS, FCC ID: SS3-MG1P1801.
Part of system submissions with FCC ID: SS3-GL300N1801.

Test Methodology

All measurements detailed in this Test Report were performed in accordance with ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices". And KDB 789033 D02 General U-NII Test Procedures New Rules v02r01.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~40GHz: 5.23 dB
Unwanted Emissions, Conducted	±1.5 dB
Temperature	±1 °C
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing in an engineering mode which was provided by the manufacturer.

The device employs 1.4MHz, 10 MHz modes. And the EUT has 2 antennas, the system configure 1T1R depending on better performance by the system automatically recognizes.

For 1.4MHz mode,60 channels are employed:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5728.5	31	5788.5
2	5730.5	32	5790.5
3	5732.5	33	5792.5
...
28	5782.5	58	5842.5
29	5784.5	59	5844.5
30	5786.5	60	5846.5

Test was performed with Channel: 1, 30 and 60.

For 10MHz mode, 115 channels are are employed:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5730.5	59	5788.5
2	5731.5
...
...	...	114	5843.5
...	...	115	5844.5
58	5787.5	/	/

Test was performed with Channel: 1, 58 and 116

Equipment Modifications

No modification was made to the EUT tested.

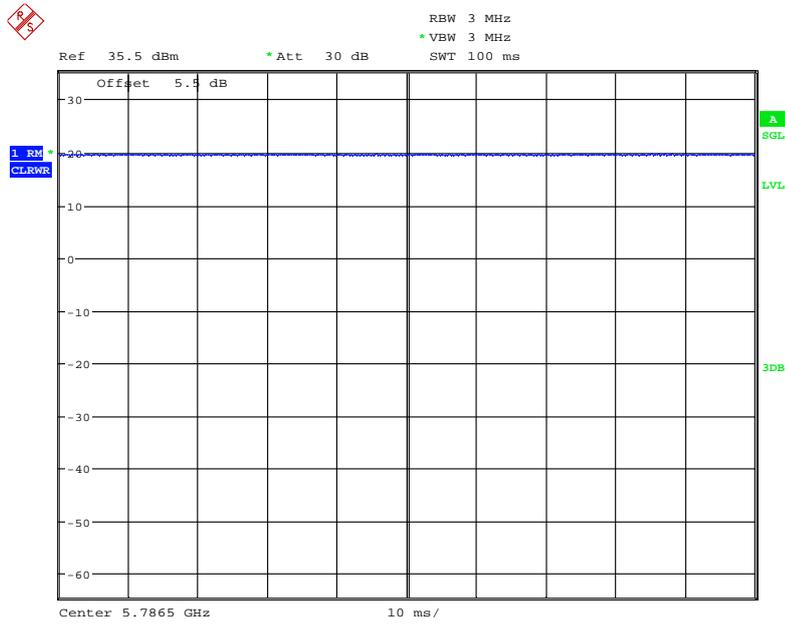
EUT Exercise Software

The software “DjiRfCertConsole_V1.3.0.51” was used for testing, which was provided by manufacturer. The maximum power with maximum duty cycle was configured as default setting,

The duty cycle as below:

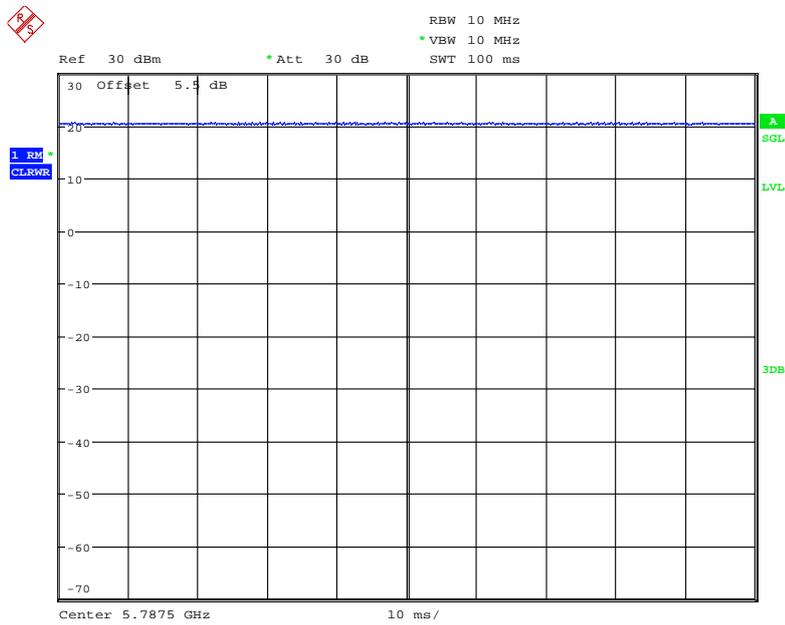
Mode	T _{on} (ms)	T _{on+off} (ms)	Duty Cycle (%)
1.4MHz	100	100	100
10MHz	100	100	100

1.4MHz



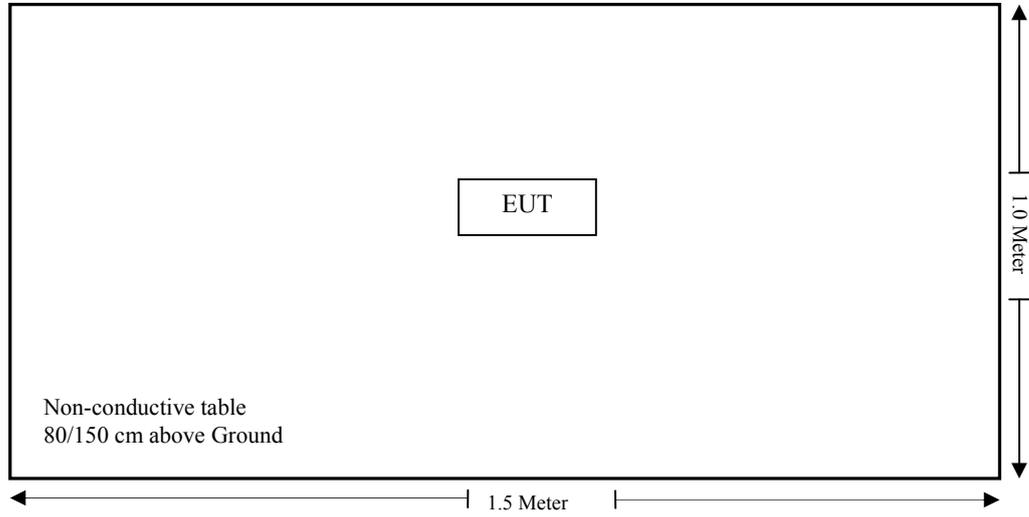
Date: 6.FEB.2018 17:11:20

10MHz



Date: 8.JAN.2018 23:00:45

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
§15.407 (f) & §1.1310 & §2.1091	Maximum Permissible Exposure (MPE)	Compliance
FCC§15.203	Antenna Requirement	Compliance
FCC§15.207 (a)	AC Line Conducted Emissions	Not Applicable
FCC§15.205& §15.209 &§15.407(b)	Undesirable Emission& Restricted Bands	Compliance
FCC§15.407(b) (1),(2),(3),(4)	Out Of Band Emissions	Compliance
FCC§15.407(a)	Emission Bandwidth	Compliance
FCC§15.407(a)	Conducted Transmitter Output Power	Compliance
FCC§15.407 (a)	Power Spectral Density	Compliance
FCC§15.407(g)	Frequency stability	Compliance

Note:

Not Applicable: the device powered by battery.

FCC §15.407 (f) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.407(f) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Frequency Band	Antenna Gain		Max. Target Power including Tolerance		Evaluation Distance (cm)	Power Density (W/m ²)	MPE Limit (W/m ²)
	(dBi)	(numeric)	(dBm)	(mW)			
2.4GHz Band	2	1.58	24	251.19	20.00	0.08	1.0
5.8GHz Band	1.5	1.41	24	251.19	20.00	0.07	1.0

Note: the Max. Target Power including Tolerance was declared by manufacturer.

The 2.4GHz band and 5.8GHz band can’t transmit simultaneously

Result: Compliance, The device meets MPE requirement for Devices Used by the General Public (Uncontrolled Environment) at distance ≥20 cm.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

The EUT has 2 antennas permanently attached to the unit, and the antennas gain is 2.0 dBi in 2.4 GHz band and 1.5dBi in 5.8 GHz band, fulfill the requirement of the item. Please refer to the internal photos.

Result: Compliance.

FCC §15.209, §15.205 , §15.407(b)–UNWANTED EMISSION

Applicable Standard

According to FCC §15.407; §15.209; §15.205;

(b) *Undesirable emission limits.* Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

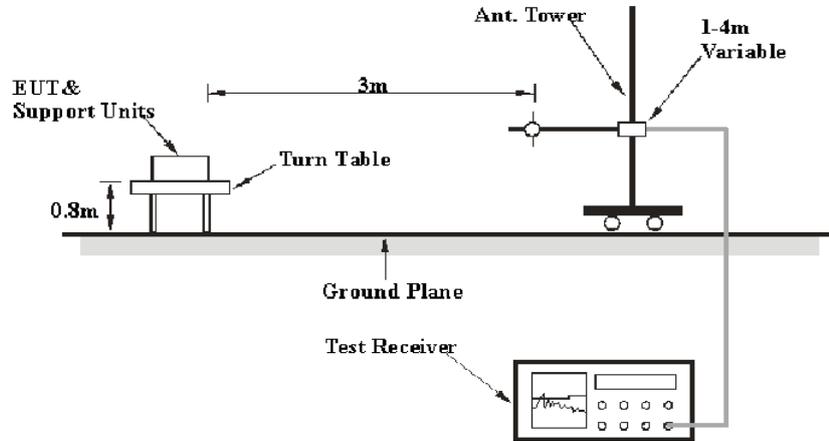
(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

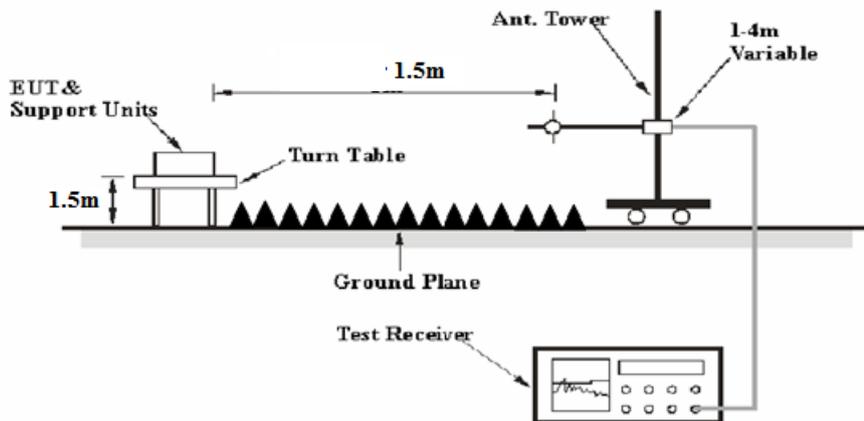
(8) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

EUT Setup

Below 1 GHz:



Above 1 GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, FCC 15.407 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30-1000MHz:

Measurement	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 40GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
Ave.	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1GHz, peak and Average detection modes for frequencies above 1GHz.

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01, emission shall be computed as: $E [dB\mu V/m] = EIRP[dBm] + 95.2$, for $d = 3$ meters.

According to C63.10, the above 1G test result shall be extrapolated to the specified distance using an extrapolation factor of 20dB/decade from 3m to 1.5m.

Distance extrapolation factor = $20 \log(\text{specific distance [3m]}/\text{test distance [1.5m]})$ dB = 6.02 dB

All emissions under the average limit and under the noise floor have not recorded in the report.

Corrected Amplitude & Margin Calculation

For the range 30MHz-1GHz, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

For the range 1GHz-40GHz, Test performed at 1.5m, the Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading and the Distance extrapolation factor. The basic equation is as follows:

$$\begin{aligned} &\text{Corrected Amplitude} \\ &= \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain} - \text{Distance extrapolation factor} \end{aligned}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corrected Amplitude} - \text{Limit}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2017-09-01	2018-09-01
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10
HP	Amplifier	8447D	2727A05902	2017-09-05	2018-09-05
N/A	Coaxial Cable	C-NJNJ-50	C-0400-01	2017-09-05	2018-09-05
N/A	Coaxial Cable	C-NJNJ-50	C-0075-01	2017-09-05	2018-09-05
N/A	Coaxial Cable	C-NJNJ-50	C-1000-01	2017-09-05	2018-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2017-12-08	2018-12-08
ETS-Lindgren	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-05
MITEQ	Amplifier	AFS42-00101800-25-S-42	2001271	2017-09-05	2018-09-05
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-02 1304	2017-06-16	2020-06-15
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-01 1302	2016-11-18	2019-11-18
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2017-06-27	2018-06-27
N/A	Coaxial Cable	C-SJSJ-50	C-0800-01	2017-09-05	2018-09-05
Chengdu OuLi	Bandrejector Filter	5725-5850	005	2017-09-05	2018-09-05
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	18.3 ~ 19.4 °C
Relative Humidity:	28 ~ 32 %
ATM Pressure:	101.1 ~ 102.1 kPa

The testing was performed by Sunny Cen & Blake Yang on 2018-01-10 & 2018-01-16.

Test Mode: Transmitting

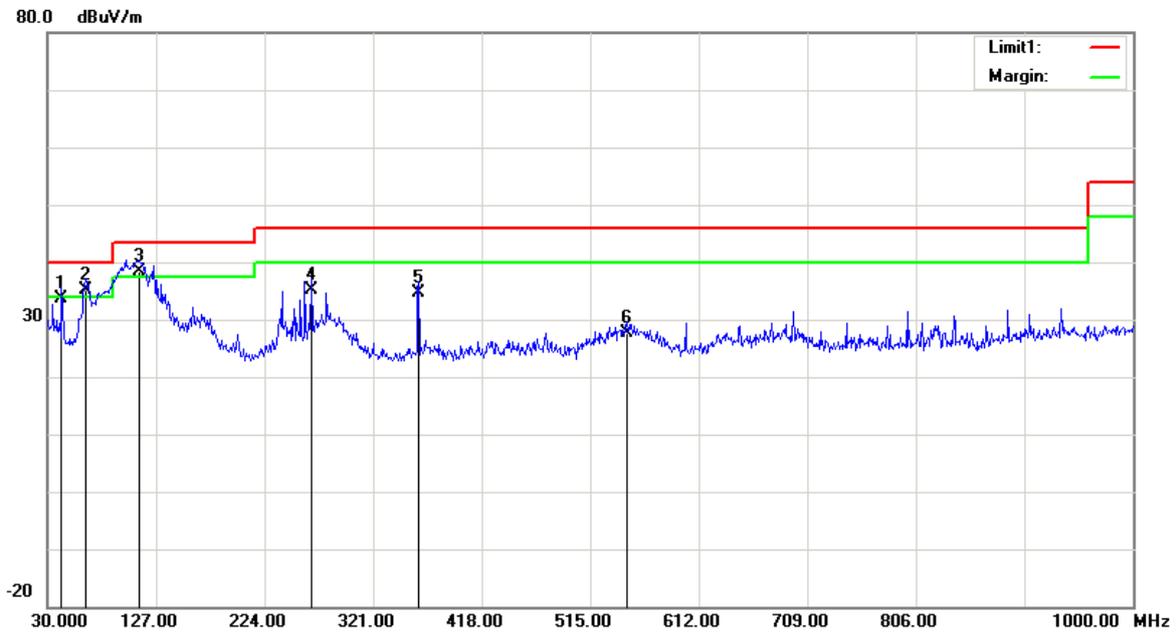
1) 30MHz-1GHz(1.4MHz Chain 0 middle channel was the worst):

Horizontal:



Frequency (MHz)	Receiver Reading (dB μ V)	Detector	Correction Factor (dB/m)	Cord. Amp. (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
75.5900	44.62	QP	-12.02	32.60	40.00	7.40
121.1800	43.90	QP	-6.00	37.90	43.50	5.60
265.7100	41.96	QP	-6.36	35.60	46.00	10.40
279.2900	39.76	QP	-5.66	34.10	46.00	11.90
551.8600	37.40	QP	-3.50	33.90	46.00	12.10
631.4000	33.66	QP	-1.86	31.80	46.00	14.20

Vertical:



Frequency (MHz)	Receiver Reading (dBµV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
42.6100	42.48	QP	-8.78	33.70	40.00	6.30
63.9500	47.91	QP	-12.81	35.10	40.00	4.90
111.4800	45.50	QP	-7.00	38.50	43.50	5.00
265.7100	41.56	QP	-6.36	35.20	46.00	10.80
361.7400	40.00	QP	-5.30	34.70	46.00	11.30
547.9800	31.11	QP	-3.51	27.60	46.00	18.40

2) 1-40GHz:
1.4MHz Mode
Chain 0:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 5728.5 MHz									
5728.50	87.98	PK	H	34.19	3.69	0.00	119.84	N/A	N/A
5728.50	78.19	AV	H	34.19	3.69	0.00	110.05	N/A	N/A
5728.50	95.35	PK	V	34.19	3.69	0.00	127.21	N/A	N/A
5728.50	86.04	AV	V	34.19	3.69	0.00	117.90	N/A	N/A
5725.00	53.32	PK	V	34.19	3.69	0.00	85.18	122.20	37.02
5720.00	31.10	PK	V	34.19	3.69	0.00	62.96	110.80	47.84
5700.00	29.64	PK	V	34.18	3.68	0.00	61.48	105.20	43.72
5650.00	28.53	PK	V	34.16	3.63	0.00	60.30	68.20	7.90
11457.00	58.72	PK	V	38.96	6.59	37.33	60.92	74.00	13.08
11457.00	47.66	AV	V	38.96	6.59	37.33	49.86	54.00	4.14
17185.50	48.75	PK	V	41.28	8.77	38.64	54.14	74.00	19.86
17185.50	38.97	AV	V	41.28	8.77	38.64	44.36	54.00	9.64
Middle Channel: 5787.5 MHz									
5786.50	87.59	PK	H	34.21	3.71	0.00	119.49	N/A	N/A
5786.50	78.55	AV	H	34.21	3.71	0.00	110.45	N/A	N/A
5786.50	95.21	PK	V	34.21	3.71	0.00	127.11	N/A	N/A
5786.50	84.67	AV	V	34.21	3.71	0.00	116.57	N/A	N/A
11573.00	59.75	PK	V	39.00	6.61	37.44	61.90	74.00	12.10
11573.00	48.72	AV	V	39.00	6.61	37.44	50.87	54.00	3.13
17359.50	49.75	PK	V	42.29	8.81	38.52	56.31	74.00	17.69
17359.50	39.66	AV	V	42.29	8.81	38.52	46.22	54.00	7.78
High Channel: 5846.5 MHz									
5846.50	87.37	PK	H	34.24	3.75	0.00	119.34	N/A	N/A
5846.50	78.47	AV	H	34.24	3.75	0.00	110.44	N/A	N/A
5846.50	95.67	PK	V	34.24	3.75	0.00	127.64	N/A	N/A
5846.50	84.23	AV	V	34.24	3.75	0.00	116.20	N/A	N/A
5850.00	48.96	PK	V	34.24	3.75	0.00	80.93	122.20	41.27
5855.00	34.08	PK	V	34.24	3.75	0.00	66.05	110.80	44.75
5875.00	29.63	PK	V	34.25	3.77	0.00	61.63	105.20	43.57
5925.00	27.89	PK	V	34.27	3.80	0.00	59.94	68.20	8.26
11693.00	60.44	PK	V	39.00	6.65	37.58	62.49	74.00	11.51
11693.00	48.67	AV	V	39.00	6.65	37.58	50.72	54.00	3.28
17539.50	49.75	PK	V	43.34	8.85	38.38	57.54	74.00	16.46
17539.50	39.85	AV	V	43.34	8.85	38.38	47.64	54.00	6.36

Chain 1:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 5728.5 MHz									
5728.50	87.11	PK	H	34.19	3.69	0.00	118.97	N/A	N/A
5728.50	77.35	AV	H	34.19	3.69	0.00	109.21	N/A	N/A
5728.50	96.26	PK	V	34.19	3.69	0.00	128.12	N/A	N/A
5728.50	86.54	AV	V	34.19	3.69	0.00	118.40	N/A	N/A
5725.00	53.23	PK	V	34.19	3.69	0.00	85.09	122.20	37.11
5720.00	31.17	PK	V	34.19	3.69	0.00	63.03	110.80	47.77
5700.00	29.54	PK	V	34.18	3.68	0.00	61.38	105.20	43.82
5650.00	27.57	PK	V	34.16	3.63	0.00	59.34	68.20	8.86
11457.00	58.67	PK	V	38.96	6.59	37.33	60.87	74.00	13.13
11457.00	46.62	AV	V	38.96	6.59	37.33	48.82	54.00	5.18
17185.50	48.84	PK	V	41.28	8.77	38.64	54.23	74.00	19.77
17185.50	35.92	AV	V	41.28	8.77	38.64	41.31	54.00	12.69
Middle Channel: 5786.5 MHz									
5786.50	85.67	PK	H	34.21	3.71	0.00	117.57	N/A	N/A
5786.50	75.42	AV	H	34.21	3.71	0.00	107.32	N/A	N/A
5786.50	95.36	PK	V	34.21	3.71	0.00	127.26	N/A	N/A
5786.50	85.34	AV	V	34.21	3.71	0.00	117.24	N/A	N/A
11575.00	59.65	PK	V	39.00	6.61	37.45	61.79	74.00	12.21
11575.00	46.63	AV	V	39.00	6.61	37.45	48.77	54.00	5.23
17362.50	49.72	PK	V	42.30	8.81	38.52	56.29	74.00	17.71
17362.50	36.71	AV	V	42.30	8.81	38.52	43.28	54.00	10.72
High Channel: 5846.5 MHz									
5846.50	85.63	PK	H	34.24	3.75	0.00	117.60	N/A	N/A
5846.50	75.49	AV	H	34.24	3.75	0.00	107.46	N/A	N/A
5846.50	95.34	PK	V	34.24	3.75	0.00	127.31	N/A	N/A
5846.50	85.26	AV	V	34.24	3.75	0.00	117.23	N/A	N/A
5850.00	47.82	PK	V	34.24	3.75	0.00	79.79	122.20	42.41
5855.00	34.08	PK	V	34.24	3.75	0.00	66.05	110.80	44.75
5875.00	29.59	PK	V	34.25	3.77	0.00	61.59	105.20	43.61
5925.00	27.58	PK	V	34.27	3.80	0.00	59.63	68.20	8.57
11693.00	60.14	PK	V	39.00	6.65	37.58	62.19	74.00	11.81
11693.00	47.24	AV	V	39.00	6.65	37.58	49.29	54.00	4.71
17539.50	49.73	PK	V	43.34	8.85	38.38	57.52	74.00	16.48
17539.50	36.87	AV	V	43.34	8.85	38.38	44.66	54.00	9.34

10MHz mode

Chain 0:

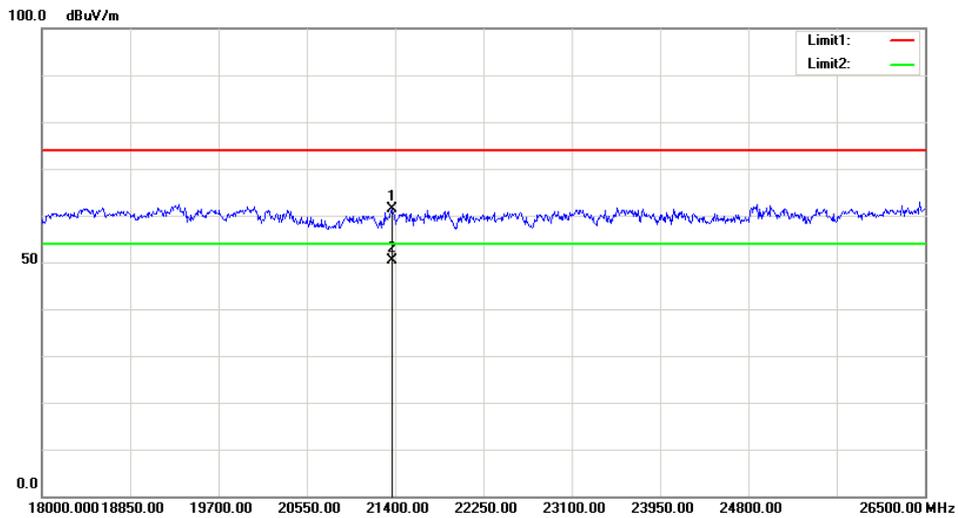
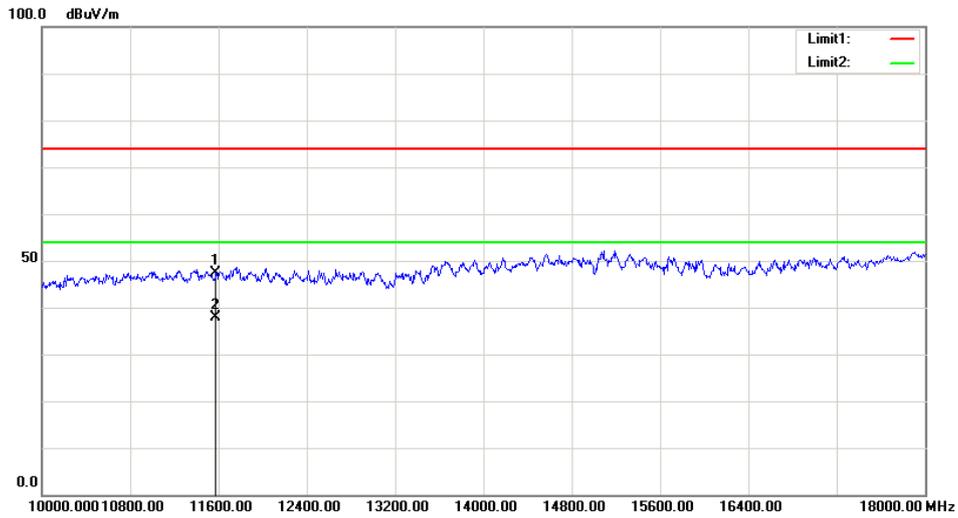
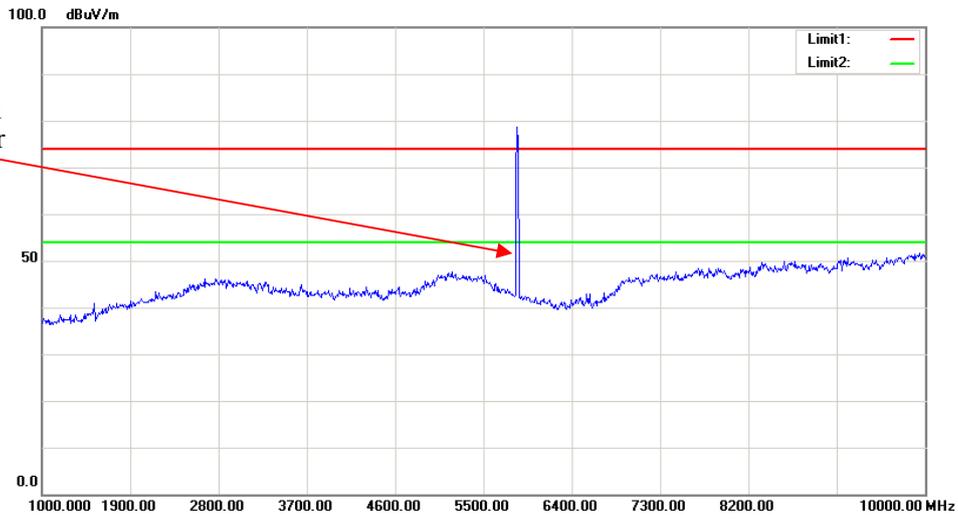
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 5730.5 MHz									
5730.50	81.48	PK	H	34.19	3.69	0.00	113.34	N/A	N/A
5730.50	69.55	AV	H	34.19	3.69	0.00	101.41	N/A	N/A
5730.50	89.53	PK	V	34.19	3.69	0.00	121.39	N/A	N/A
5730.50	77.84	AV	V	34.19	3.69	0.00	109.70	N/A	N/A
5725.00	71.47	PK	V	34.19	3.69	0.00	103.33	122.20	18.87
5720.00	54.64	PK	V	34.19	3.69	0.00	86.50	110.80	24.30
5700.00	29.81	PK	V	34.18	3.68	0.00	61.65	105.20	43.55
5650.00	31.18	PK	V	34.16	3.63	0.00	62.95	68.20	5.25
11461.00	61.36	PK	V	38.96	6.59	37.34	63.55	74.00	10.45
11461.00	48.57	AV	V	38.96	6.59	37.34	50.76	54.00	3.24
17191.50	50.45	PK	V	41.31	8.77	38.64	55.87	74.00	18.13
17191.50	41.24	AV	V	41.31	8.77	38.64	46.66	54.00	7.34
Middle Channel: 5787.5 MHz									
5787.50	81.35	PK	H	34.22	3.71	0.00	113.26	N/A	N/A
5787.50	69.14	AV	H	34.22	3.71	0.00	102.05	N/A	N/A
5787.50	86.78	PK	V	34.22	3.71	0.00	118.69	N/A	N/A
5787.50	74.84	AV	V	34.22	3.71	0.00	106.75	N/A	N/A
11575.00	59.55	PK	V	39.00	6.61	37.45	61.69	74.00	12.31
11575.00	47.89	AV	V	39.00	6.61	37.45	50.03	54.00	3.97
17362.50	47.34	PK	V	42.30	8.81	38.52	53.91	74.00	20.09
17362.50	36.52	AV	V	42.30	8.81	38.52	43.09	54.00	10.91
High Channel: 5844.5 MHz									
5844.50	82.01	PK	H	34.24	3.75	0.00	113.98	N/A	N/A
5844.50	69.44	AV	H	34.24	3.75	0.00	101.41	N/A	N/A
5844.50	88.75	PK	V	34.24	3.75	0.00	120.72	N/A	N/A
5844.50	76.58	AV	V	34.24	3.75	0.00	108.55	N/A	N/A
5850.00	57.07	PK	V	34.24	3.75	0.00	89.04	122.20	33.16
5855.00	26.37	PK	V	34.24	3.75	0.00	58.34	110.80	52.46
5875.00	25.45	PK	V	34.25	3.77	0.00	57.45	105.20	47.75
5925.00	24.72	PK	V	34.27	3.80	0.00	56.77	68.20	11.43
11689.00	58.00	PK	V	39.00	6.65	37.58	60.05	74.00	13.95
11689.00	45.85	AV	V	39.00	6.65	37.58	47.90	54.00	6.10
17533.50	48.69	PK	V	43.31	8.85	38.39	56.44	74.00	17.56
17533.50	38.67	AV	V	43.31	8.85	38.39	46.42	54.00	7.58

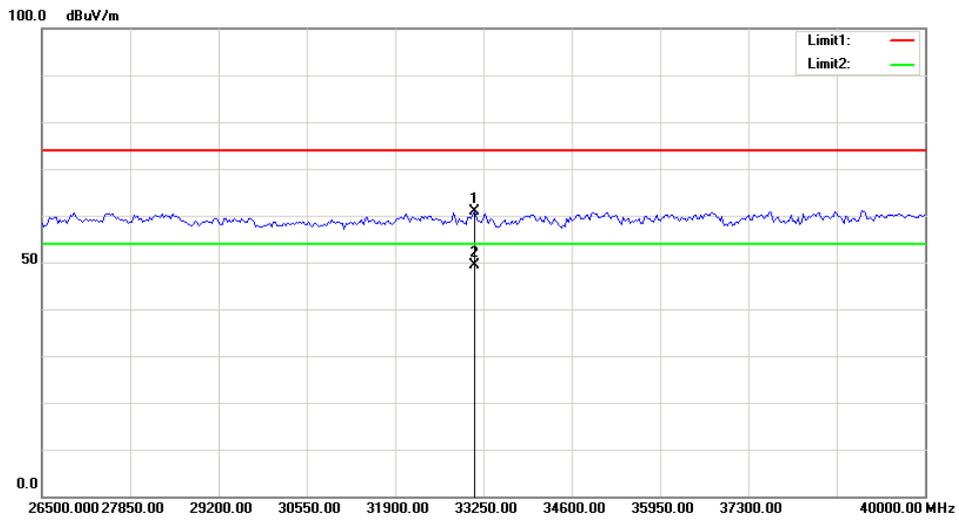
Chain 1:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
	Reading (dB μ V)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 5730.5 MHz									
5730.50	81.38	PK	H	34.19	3.69	0.00	113.24	N/A	N/A
5730.50	70.26	AV	H	34.19	3.69	0.00	102.12	N/A	N/A
5730.50	90.82	PK	V	34.19	3.69	0.00	122.68	N/A	N/A
5730.50	80.08	AV	V	34.19	3.69	0.00	111.94	N/A	N/A
5725.00	71.49	PK	V	34.19	3.69	0.00	103.35	122.20	18.85
5720.00	54.64	PK	V	34.19	3.69	0.00	86.50	110.80	24.30
5700.00	29.83	PK	V	34.18	3.68	0.00	61.67	105.20	43.53
5650.00	31.04	PK	V	34.16	3.63	0.00	62.81	68.20	5.39
11461.00	60.28	PK	V	38.96	6.59	37.34	62.47	74.00	11.53
11461.00	47.66	AV	V	38.96	6.59	37.34	49.85	54.00	4.15
17191.50	50.16	PK	V	41.31	8.77	38.64	55.58	74.00	18.42
17191.50	40.15	AV	V	41.31	8.77	38.64	45.57	54.00	8.43
Middle Channel: 5787.5 MHz									
5787.50	80.42	PK	H	34.22	3.71	0.00	112.33	N/A	N/A
5787.50	69.38	AV	H	34.22	3.71	0.00	101.29	N/A	N/A
5787.50	89.23	PK	V	34.22	3.71	0.00	121.14	N/A	N/A
5787.50	78.65	AV	V	34.22	3.71	0.00	110.56	N/A	N/A
11575.00	59.22	PK	V	39.00	6.61	37.45	61.36	74.00	12.64
11575.00	46.58	AV	V	39.00	6.61	37.45	48.72	54.00	5.28
17362.50	49.38	PK	V	42.30	8.81	38.52	55.95	74.00	18.05
17362.50	36.98	AV	V	42.30	8.81	38.52	43.55	54.00	10.45
High Channel: 5844.5 MHz									
5844.50	80.46	PK	H	34.24	3.75	0.00	112.43	N/A	N/A
5844.50	69.37	AV	H	34.24	3.75	0.00	101.34	N/A	N/A
5844.50	89.68	PK	V	34.24	3.75	0.00	121.65	N/A	N/A
5844.50	78.42	AV	V	34.24	3.75	0.00	110.39	N/A	N/A
5850.00	63.27	PK	V	34.24	3.75	0.00	95.24	122.20	26.96
5855.00	49.86	PK	V	34.24	3.75	0.00	81.83	110.80	28.97
5875.00	26.54	PK	V	34.25	3.77	0.00	58.54	105.20	46.66
5925.00	25.28	PK	V	34.27	3.80	0.00	57.33	68.20	10.87
11689.00	59.27	PK	V	39.00	6.65	37.58	61.32	74.00	12.68
11689.00	46.53	AV	V	39.00	6.65	37.58	48.58	54.00	5.42
17533.50	49.29	PK	V	43.31	8.85	38.39	57.04	74.00	16.96
17533.50	37.14	AV	V	43.31	8.85	38.39	44.89	54.00	9.11

Worst plots(1.4MHz Chain 1 middle channel was the worst)
Horizontal

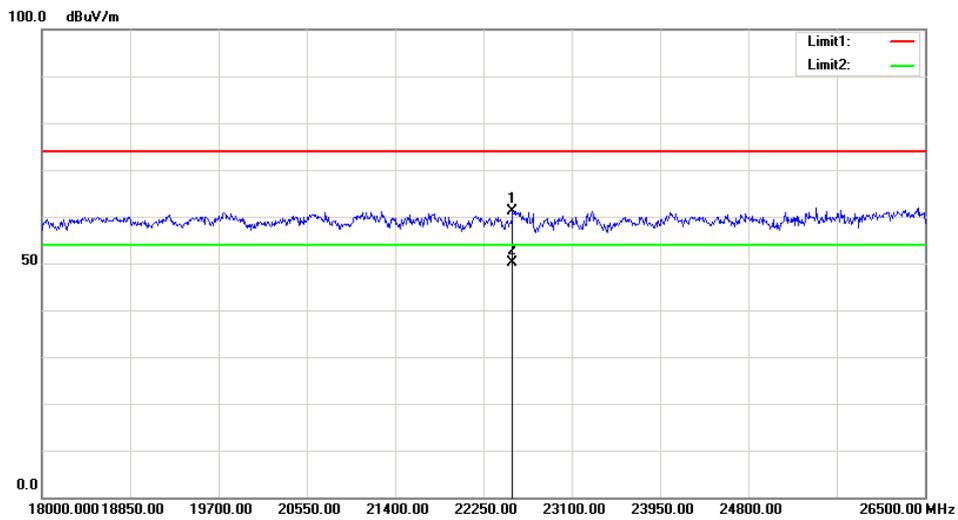
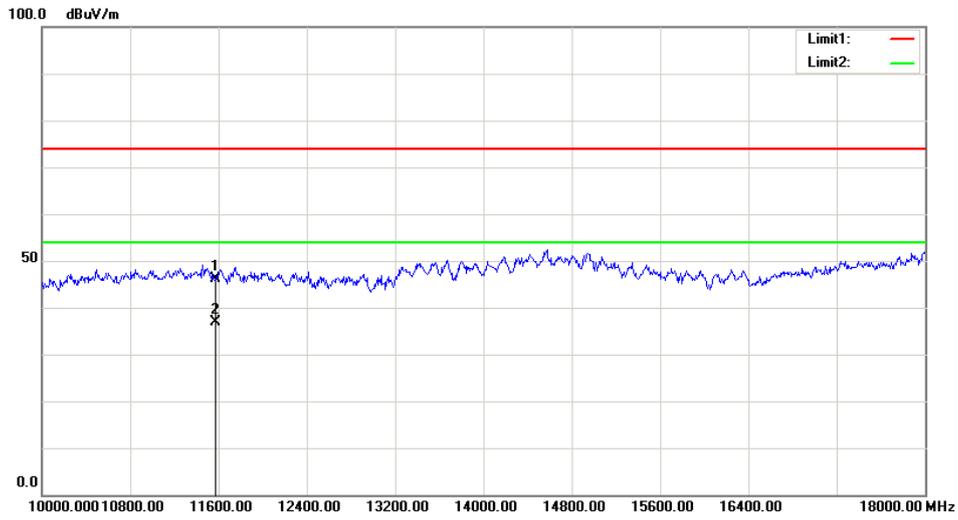
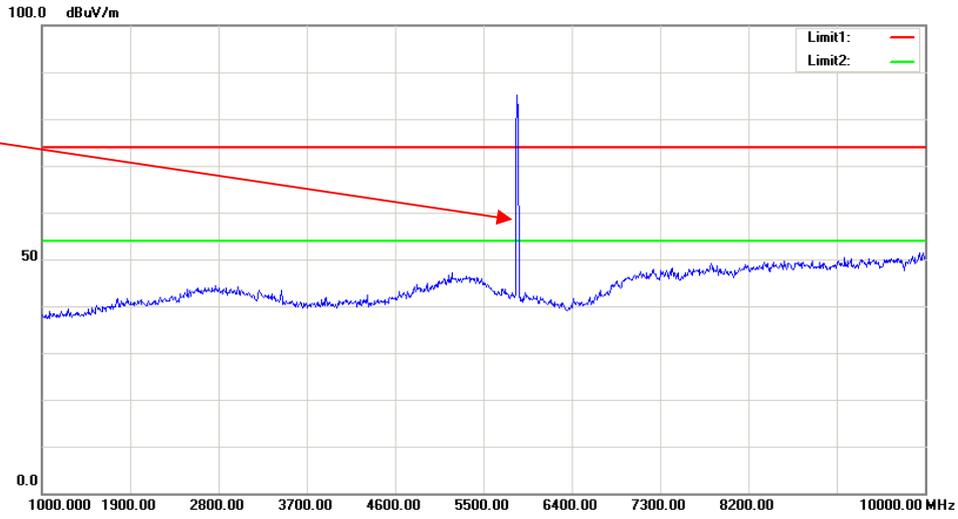
Fundamental
Test with Band
Rejection Filter

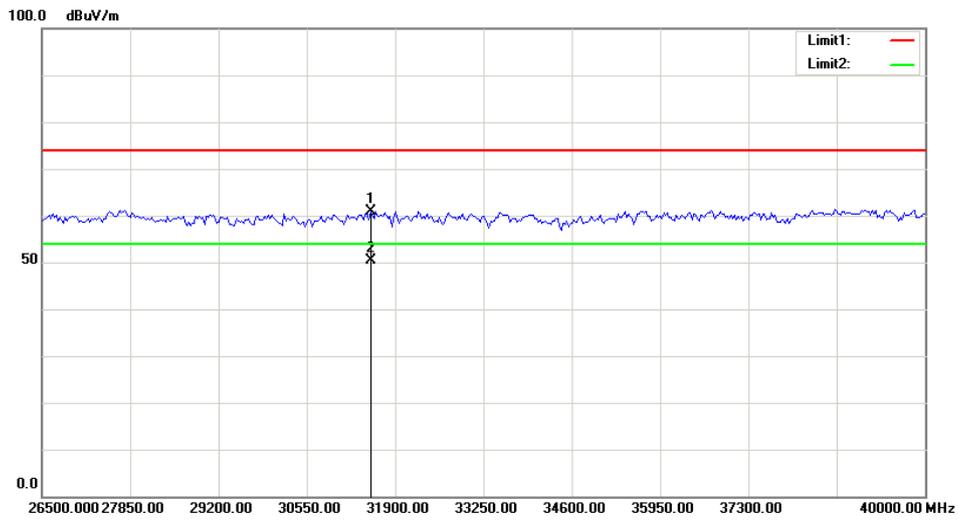




Vertical

Fundamental
Test with Band
Rejection Filter





FCC §15.407(a) §6.2– EMISSION BANDWIDTH**Applicable Standard**

15.407(a) §6.2

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSIQ 26	831929/005	2018-01-04	2019-01-04
N/A	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Test Data**Environmental Conditions**

Temperature:	20 ~ 26.6 °C
Relative Humidity:	31 ~ 50 %
ATM Pressure:	100.8 ~ 102.2 kPa

The testing was performed by Harry Yang from 2018-01-08 to 2018-02-02

Test Result: Pass.

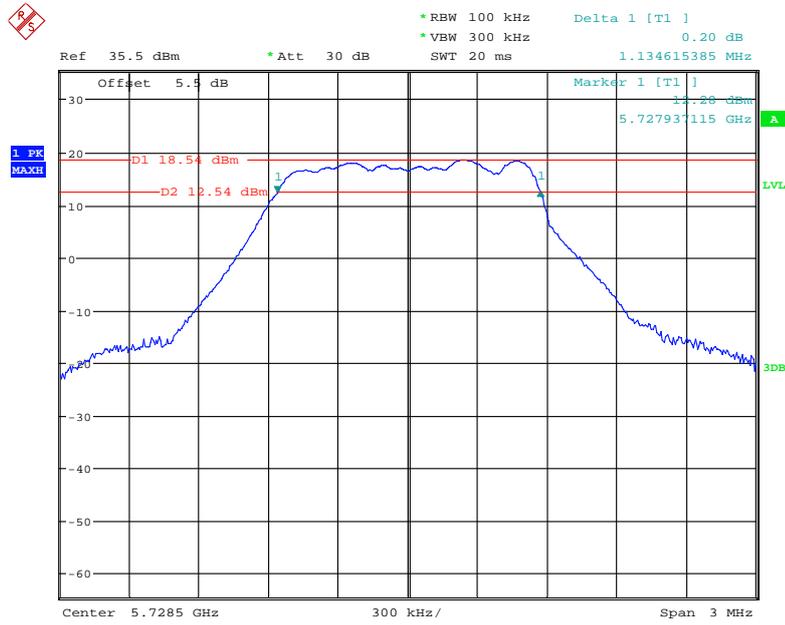
Please refer to the following tables and plots.

Test mode: Transmitting (Test was performed at chain 0)

Mode	Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
1.4MHz	Low	5728.5	1.135	1.146
	Middle	5786.5	1.168	1.164
	High	5846.5	1.133	1.14
10MHz	Low	5730.5	9.006	9.12
	Middle	5787.5	9.053	9.08
	High	5844.5	9.006	9.08

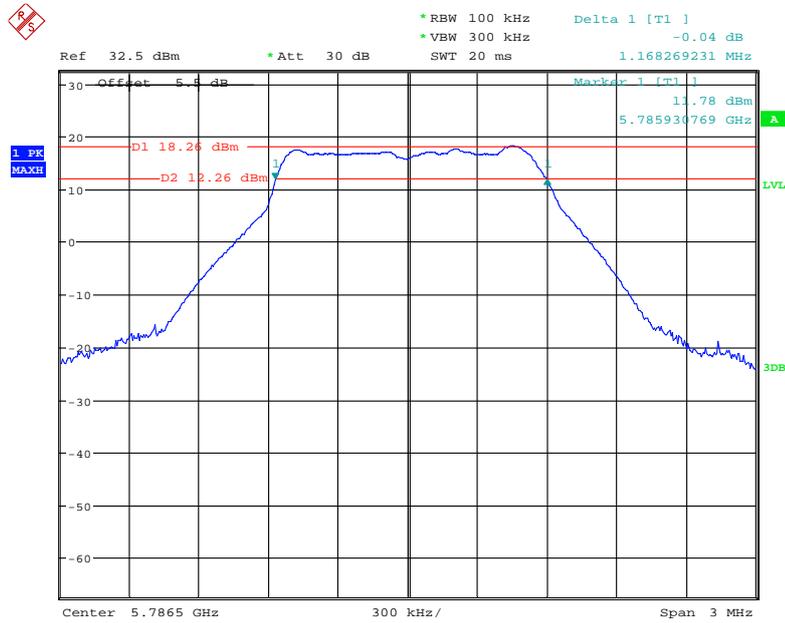
6dB Bandwidth:

1.4M Low Channel



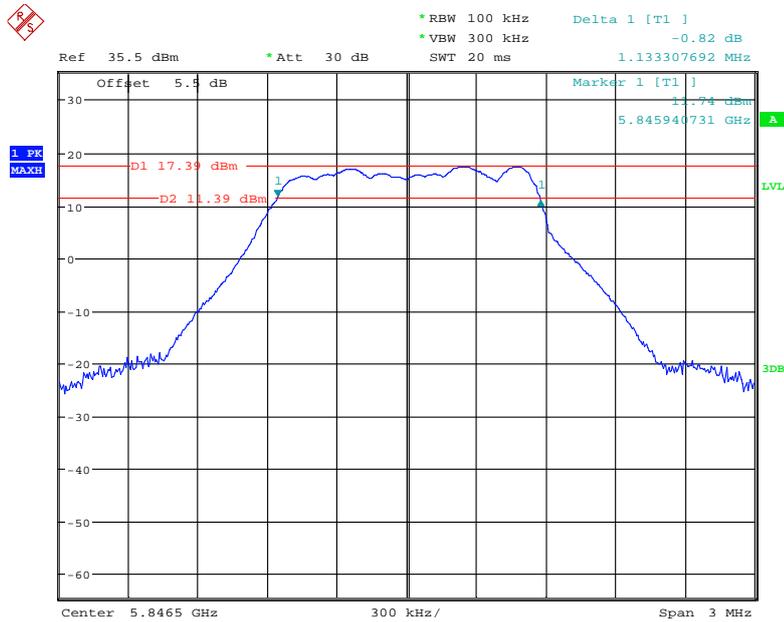
Date: 8.JAN.2018 22:11:06

1.4M Middle Channel



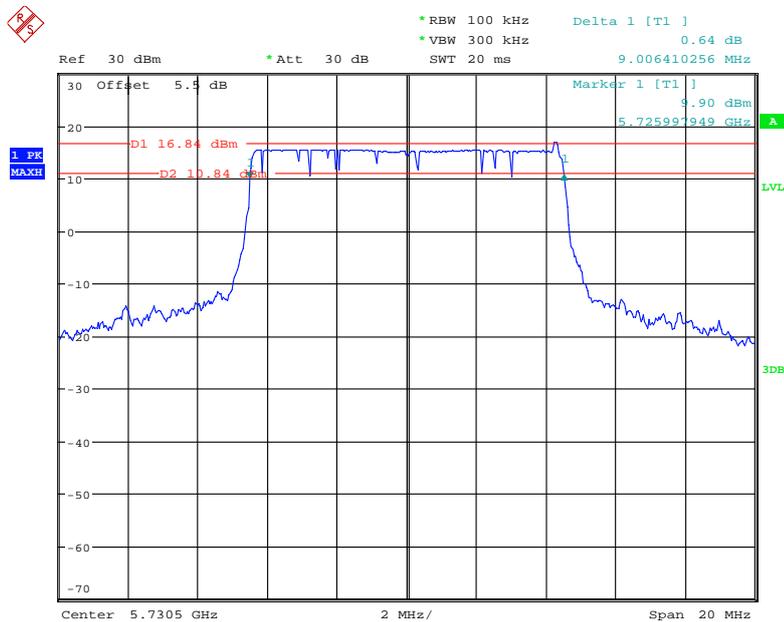
Date: 2.FEB.2018 18:42:37

1.4M High Channel



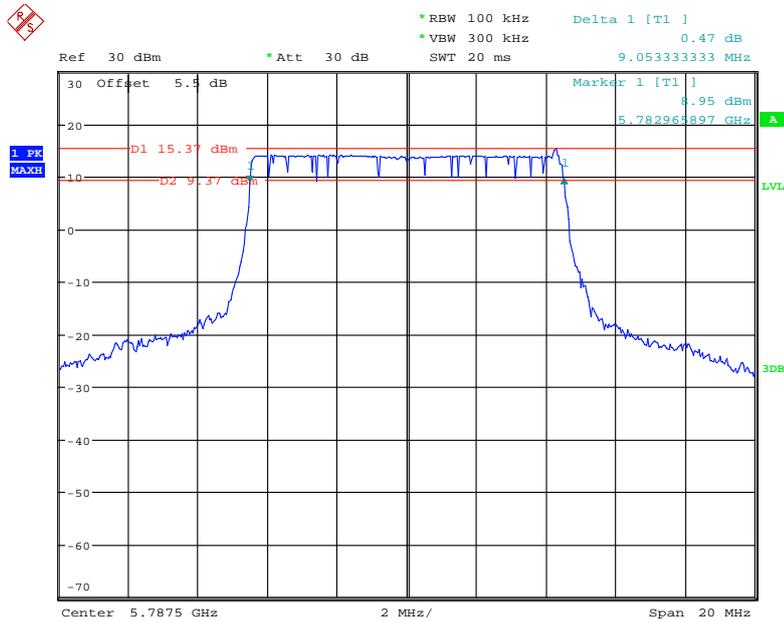
Date: 8.JAN.2018 22:12:59

10M Low Channel



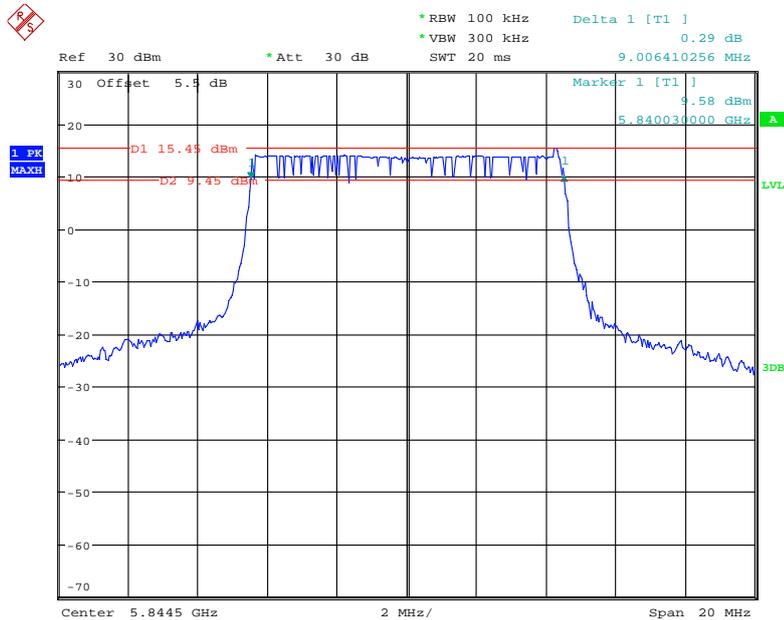
Date: 8.JAN.2018 23:03:16

10M Middle Channel



Date: 8.JAN.2018 23:04:26

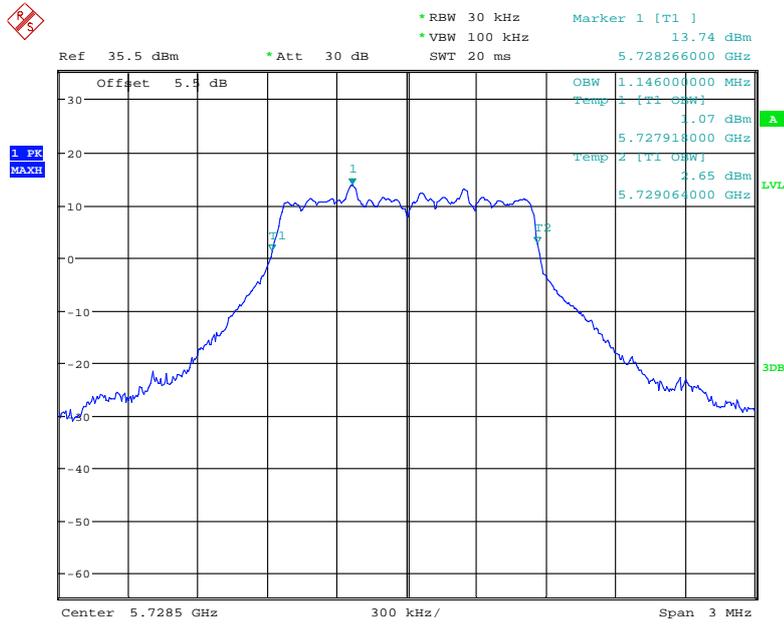
10M High Channel



Date: 8.JAN.2018 23:05:25

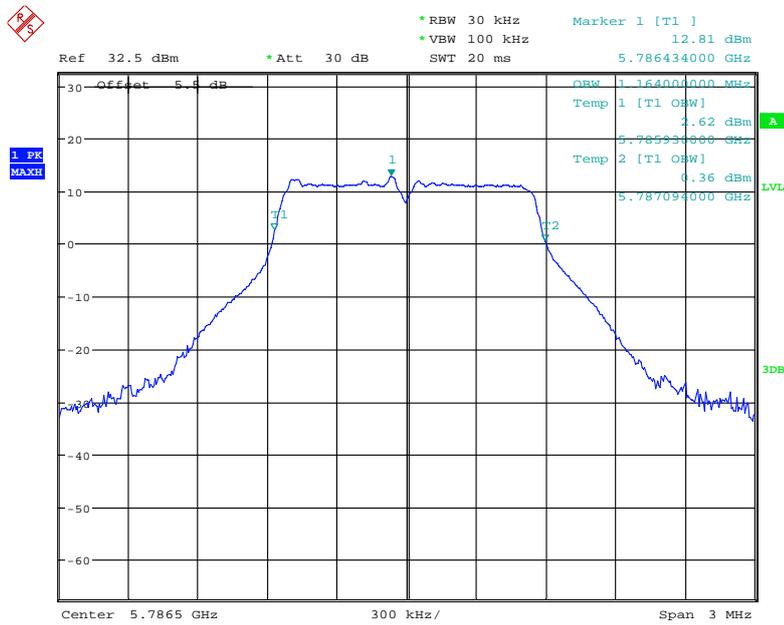
99% Occupied Bandwidth:

1.4M Low Channel



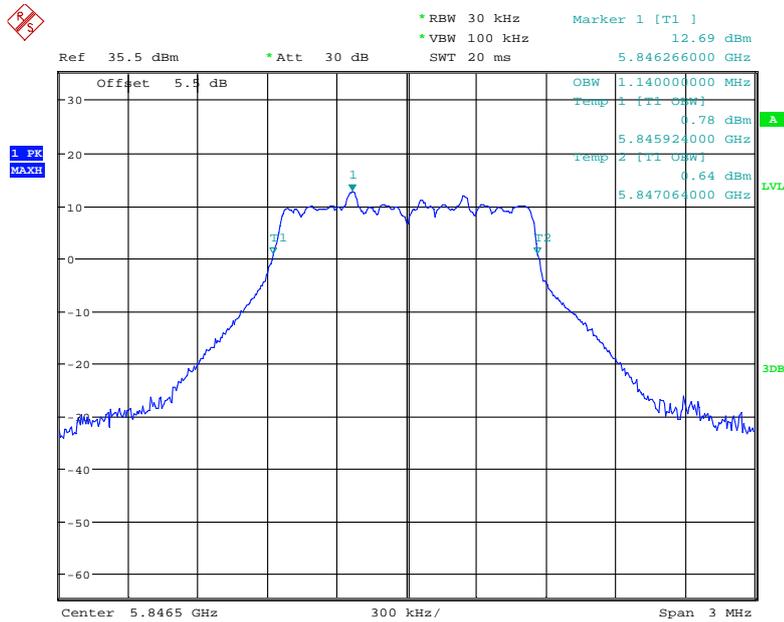
Date: 8.JAN.2018 22:17:41

1.4M Middle Channel



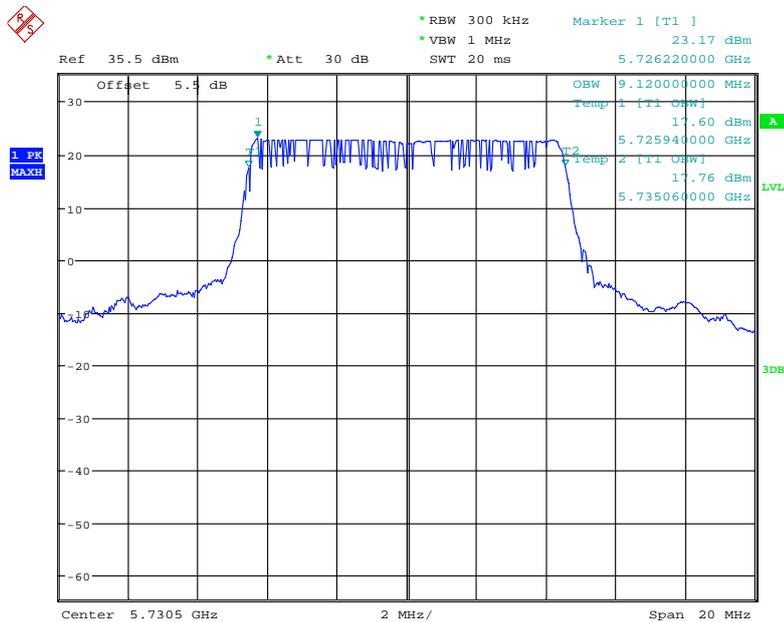
Date: 2.FEB.2018 18:44:56

1.4M High Channel



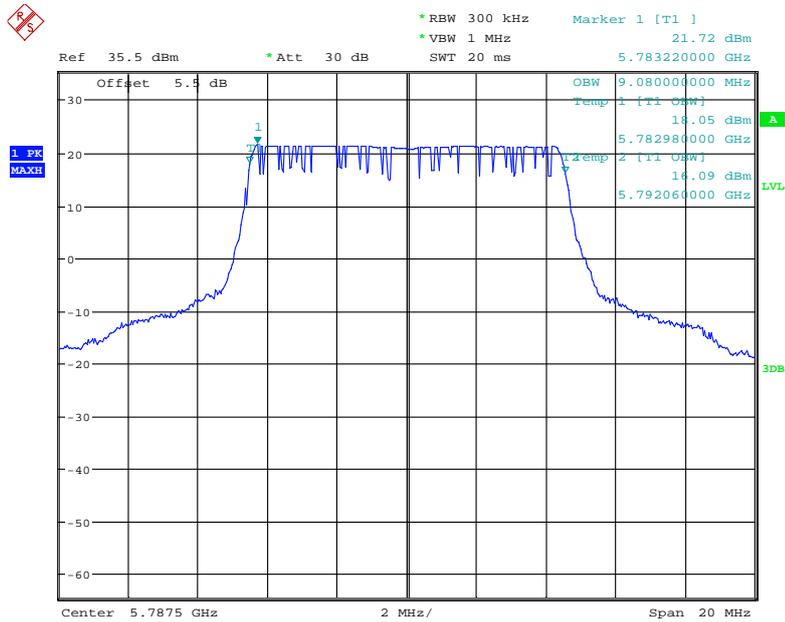
Date: 8.JAN.2018 22:18:23

10M Low Channel



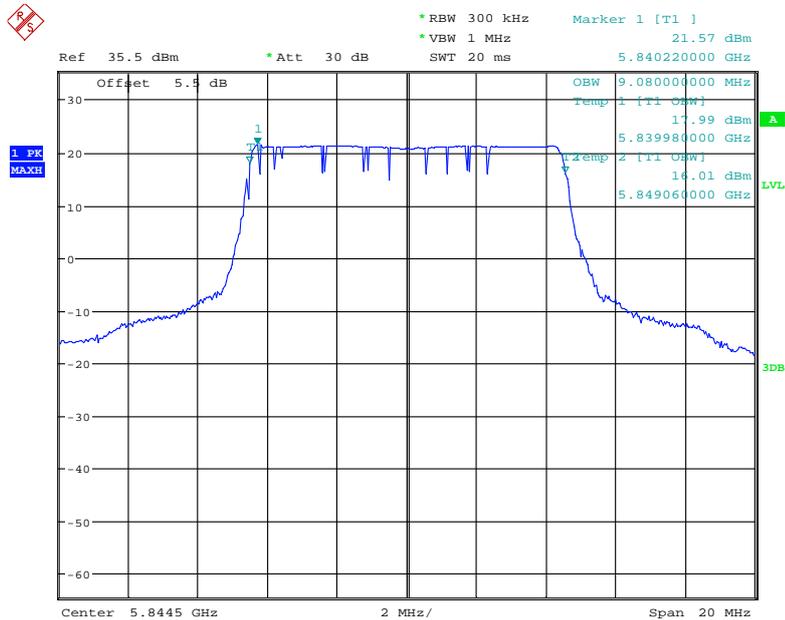
Date: 8.JAN.2018 23:10:25

10M Middle Channel



Date: 8.JAN.2018 23:11:14

10M High Channel



Date: 8.JAN.2018 23:12:22

FCC §15.407(a)– MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.407(a)

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(4) The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54210016	2017-12-11	2018-12-11
Agilent	P-Series Power Meter	N1912A	MY5000448	2017-12-11	2018-12-11
N/A	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Test Data

Environmental Conditions

Temperature:	25.4 °C
Relative Humidity:	43 %
ATM Pressure:	100.8 kPa

The testing was performed by Harry Yang on 2018-01-08.

Test Mode: Transmitting

Mode	Frequency (MHz)	Conducted Average Output Power (dBm)		Limit (dBm)	Result
		Chain 0	Chain 1		
1.4MHz	5728.5	21.39	23.42	30	PASS
	5786.5	20.72	21.94	30	PASS
	5846.5	21.17	22.1	30	PASS
10MHz	5730.5	22.45	23.6	30	PASS
	5787.5	22	22.96	30	PASS
	5844.5	21.78	22.72	30	PASS

FCC §15.407(a) - POWER SPECTRAL DENSITY

Applicable Standard

According to FCC §15.407(a)

(a) Power limits:

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200256	2018-01-04	2019-01-04
N/A	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	20 ~ 26.6 °C
Relative Humidity:	31 ~ 50 %
ATM Pressure:	100.8 ~ 102.2 kPa

The testing was performed by Harry Yang from 2018-01-08 to 2018-02-02

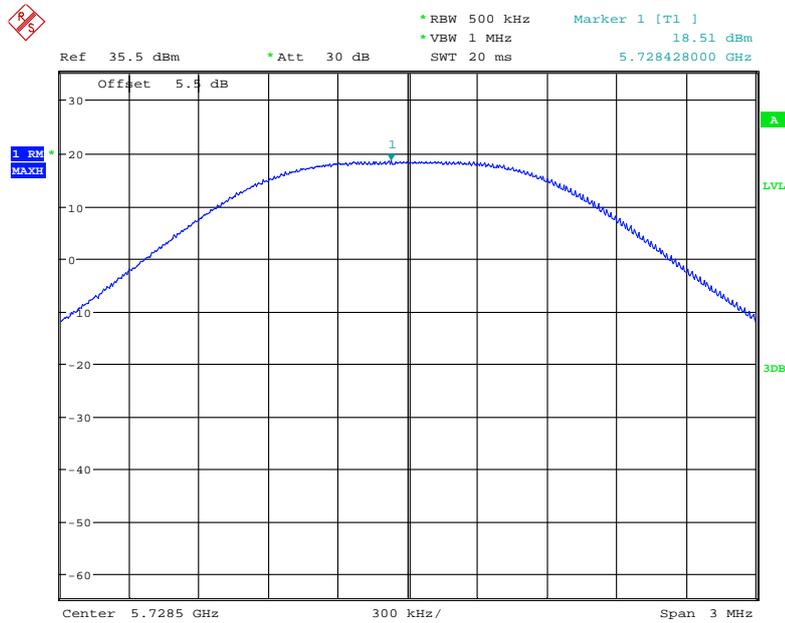
Test Mode: Transmitting

Test Result: Compliance. Please refer to the following table and plot.

Mode	Frequency (MHz)	Reading (dBm/500kHz)		Limit (dBm/500KHz)
		Chain 0	Chain 1	
1.4MHz	5728.5	18.51	20.3	30
	5786.5	17.82	19.03	30
	5846.5	17.45	18.89	30
10MHz	5730.5	12.16	14.95	30
	5787.5	11.83	13.47	30
	5844.5	11.96	13.47	30

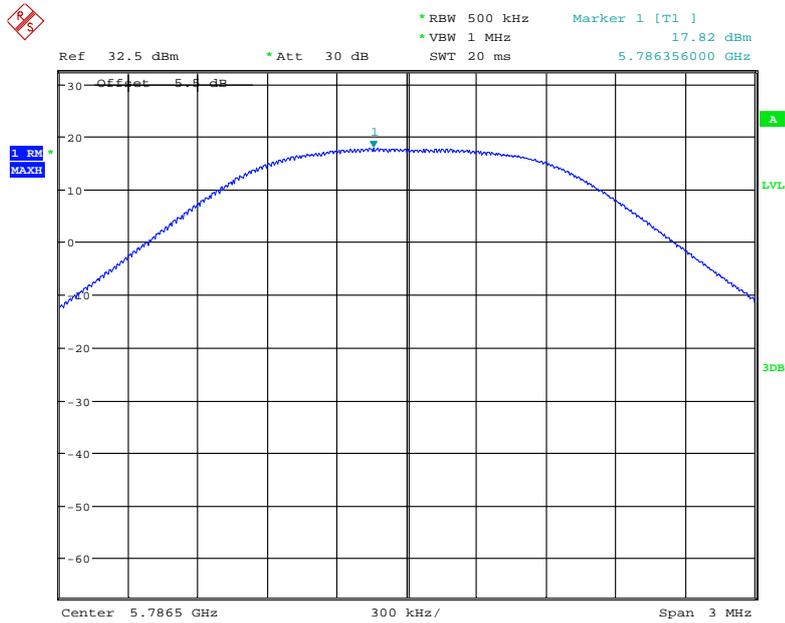
Chain 0:

1.4M Low Channel



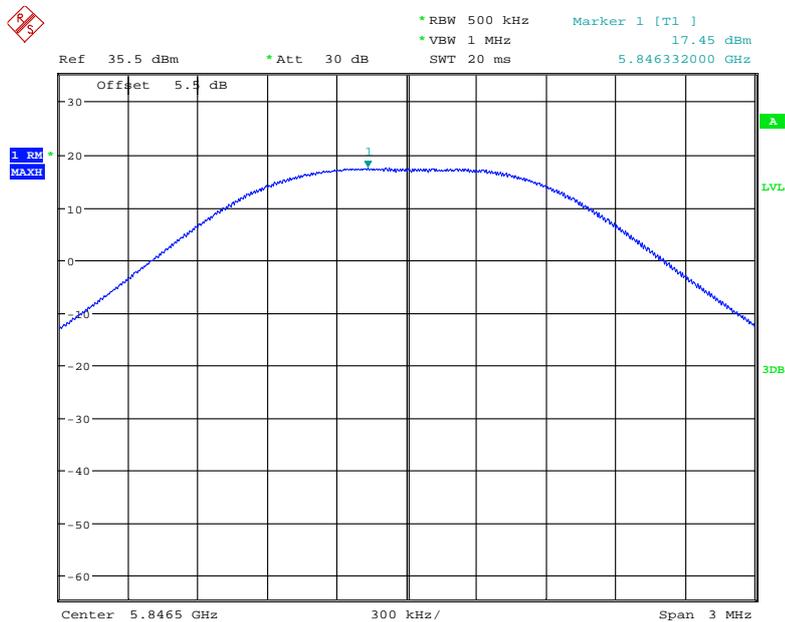
Date: 8.JAN.2018 22:26:23

1.4M Middle Channel



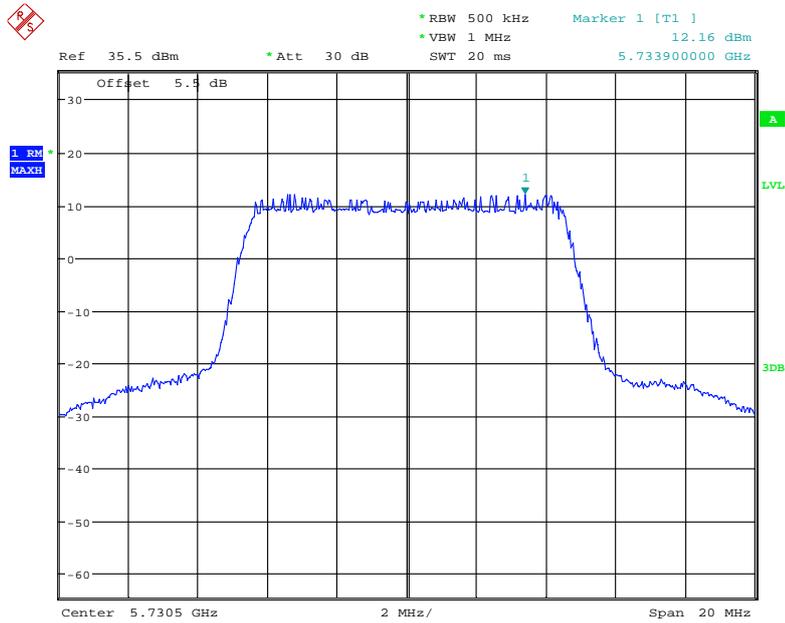
Date: 2.FEB.2018 18:46:00

1.4M High Channel



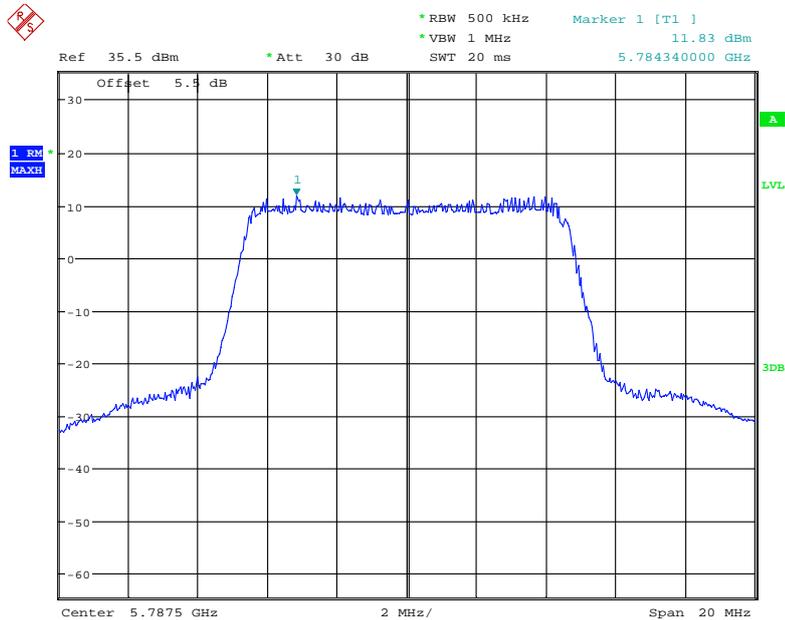
Date: 8.JAN.2018 22:25:52

10M Low Channel



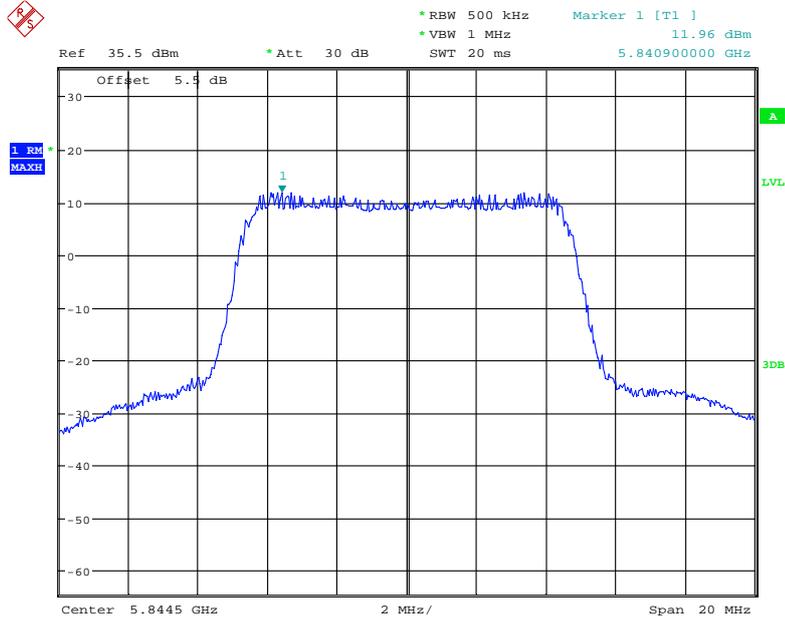
Date: 8.JAN.2018 23:14:14

10M Middle Channel



Date: 8.JAN.2018 23:13:55

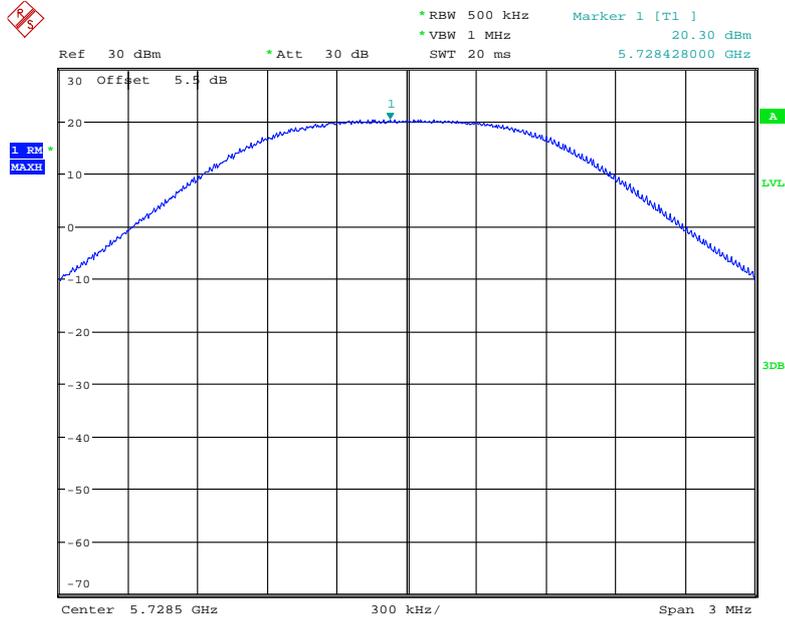
10M High Channel



Date: 8.JAN.2018 23:13:37

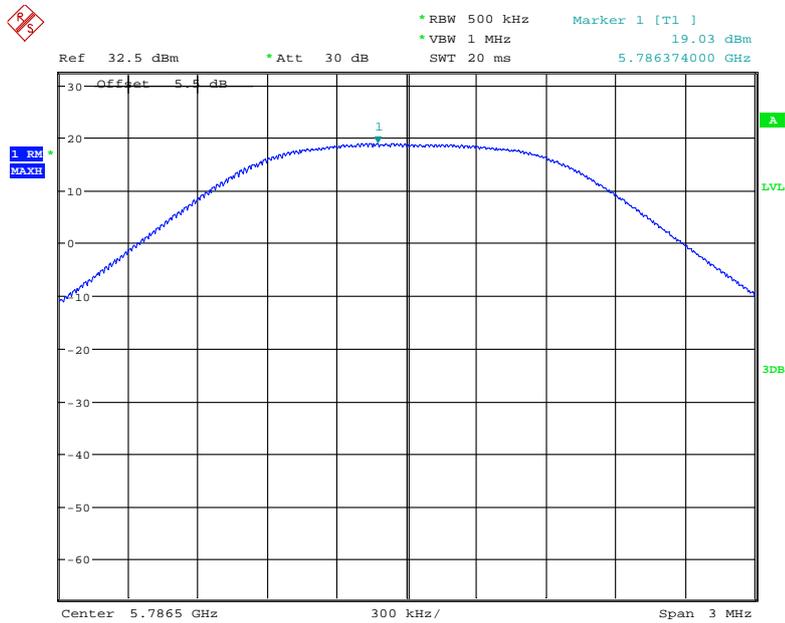
Chain 1:

1.4M Low Channel



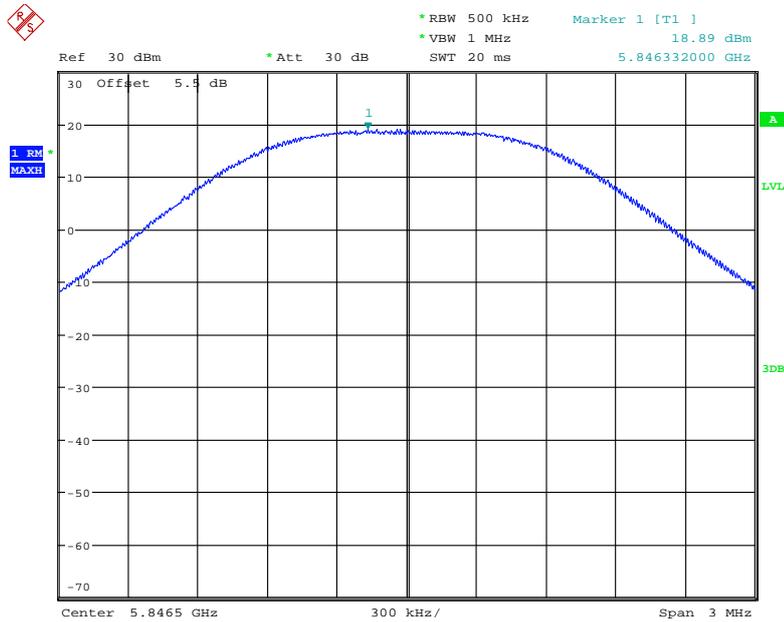
Date: 8.JAN.2018 22:40:16

1.4M Middle Channel



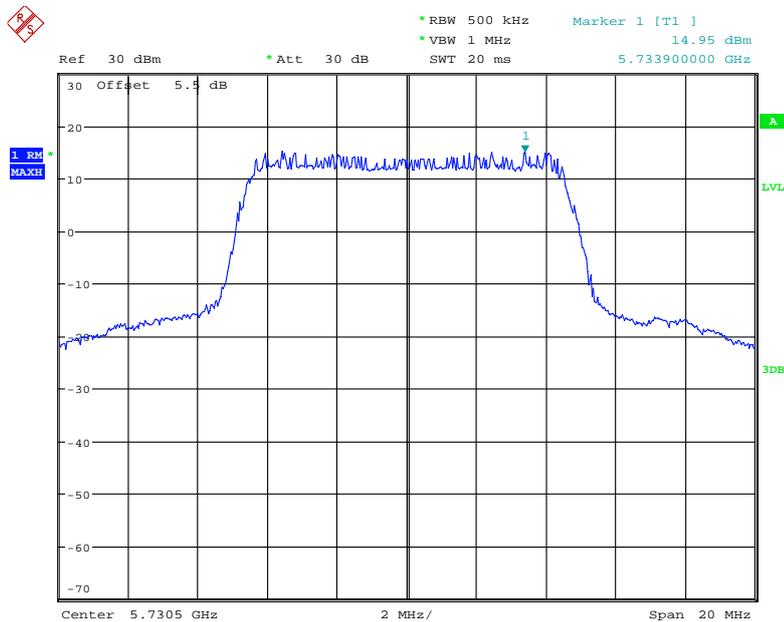
Date: 2.FEB.2018 18:48:15

1.4M High Channel



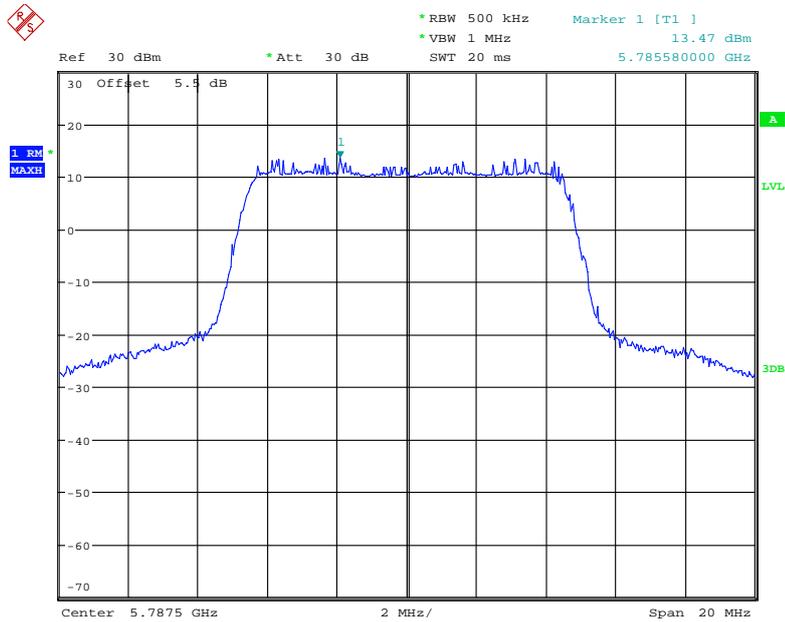
Date: 8.JAN.2018 22:40:28

10M Low Channel



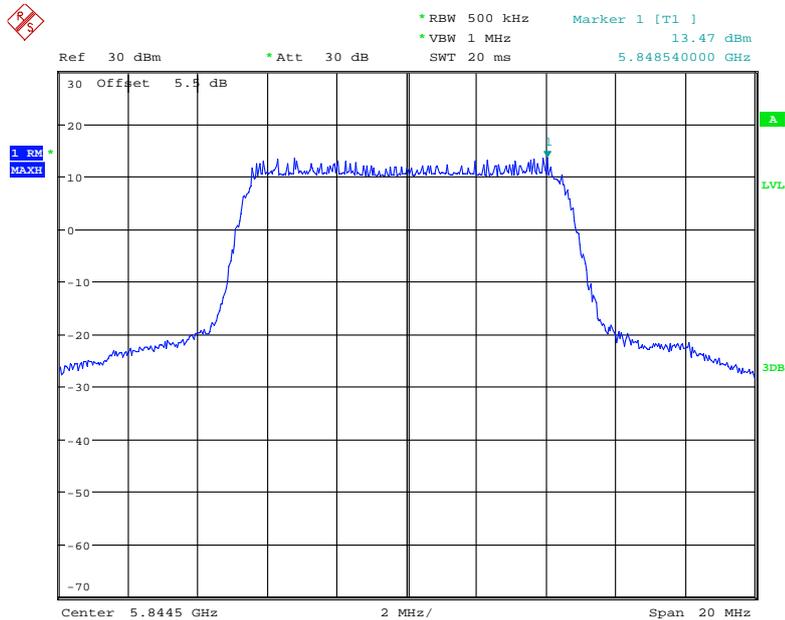
Date: 8.JAN.2018 22:59:06

10M Middle Channel



Date: 8.JAN.2018 22:59:20

10M High Channel



Date: 8.JAN.2018 22:59:37

FCC §15.407(b) – OUT- OF-BAND EMISSIONS

Applicable Standard

FCC §15.407

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

Test Procedure

According to KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200256	2018-01-04	2019-01-04
N/A	Coaxial Cable	C-SJ00-0010	C0010/01	Each time	N/A

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	25.4 °C
Relative Humidity:	43 %
ATM Pressure:	100.8 kPa

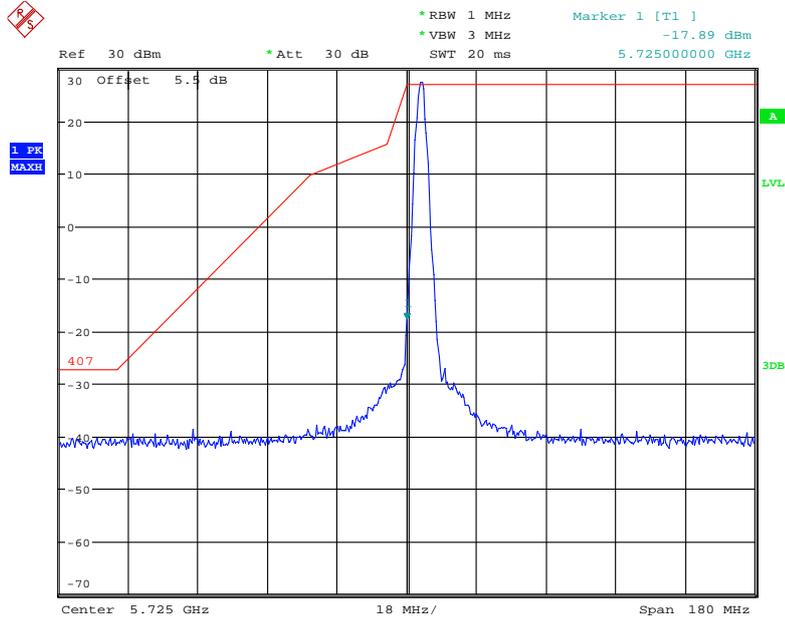
The testing was performed by Harry Yang on 2018-01-08.

Test Result: Pass.

The antenna gain was offset in the display. All emission under limit more than 3dB, so combine two chains meets the requirements. Please refer to the following plots.

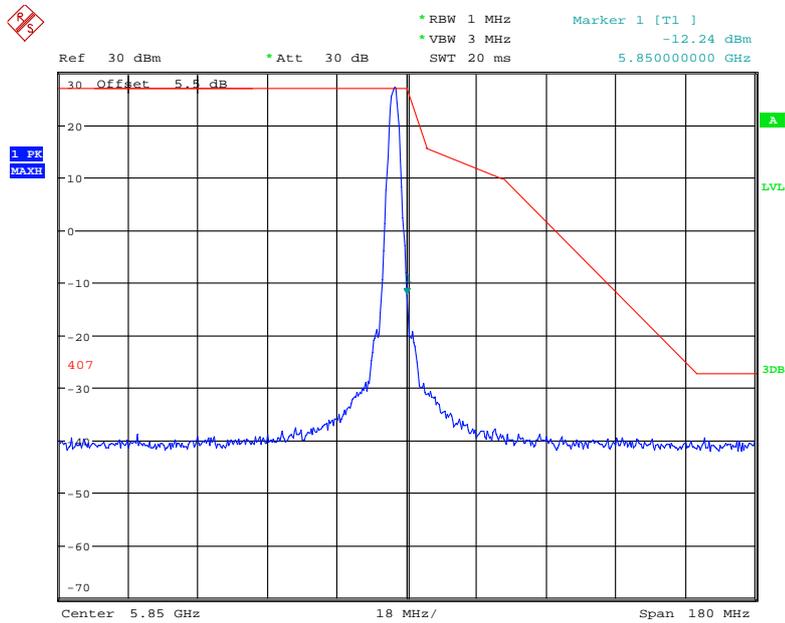
Chain 0:

5M Low Channel



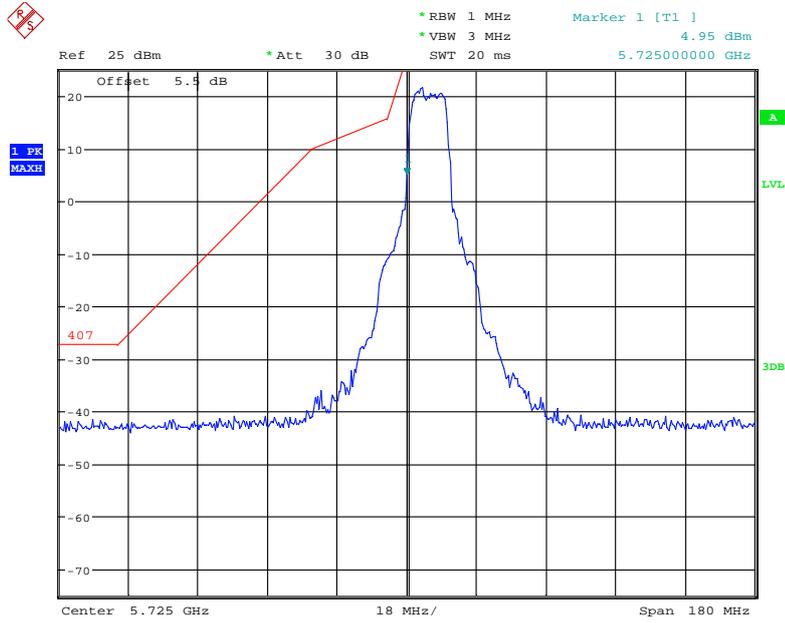
Date: 8.JAN.2018 22:46:02

5M High Channel



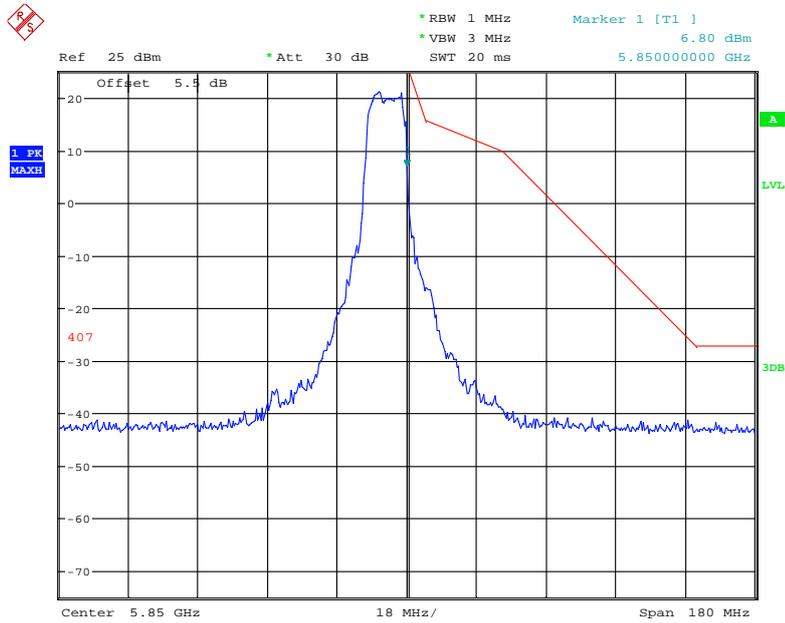
Date: 8.JAN.2018 22:45:43

10M Low Channel



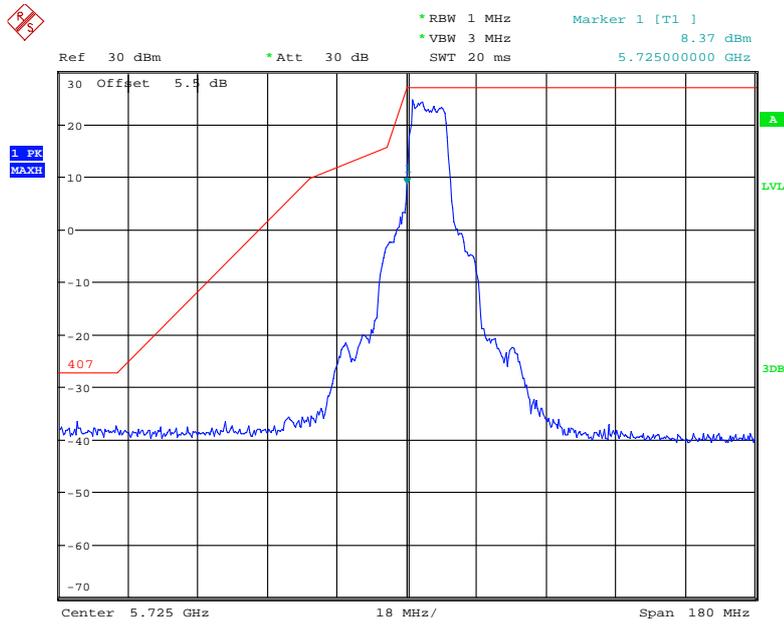
Date: 8.JAN.2018 23:15:16

10M High Channel



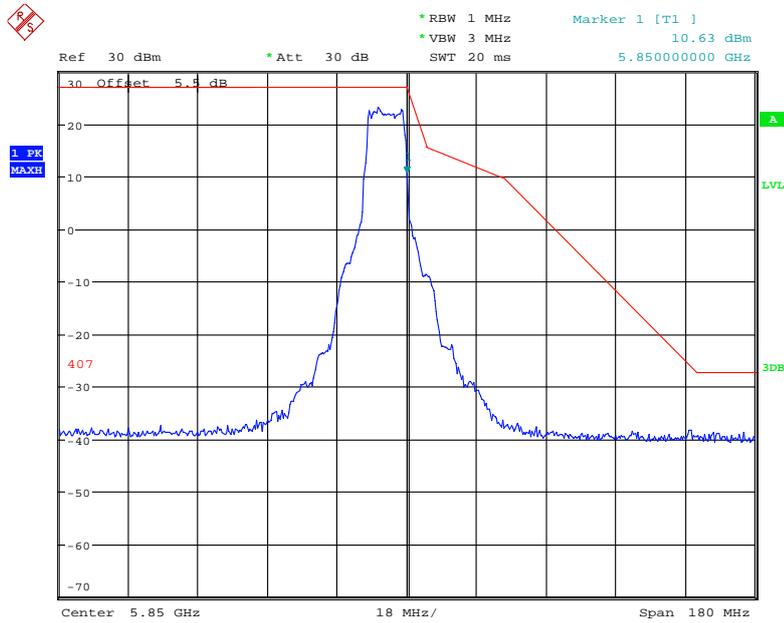
Date: 8.JAN.2018 23:15:35

10M Low Channel



Date: 8.JAN.2018 22:57:45

10M High Channel



Date: 8.JAN.2018 22:57:23

FCC §15.407(g) – FREQUENCY STABILITY

Applicable Standard

FCC §15.407

(g) Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

Test Procedure

According to C63.10-2013 clause 6.8.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU 26	200256	2018-01-04	2019-01-04
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-4	2017-09-10	2018-09-10
UNI-T	Multimeter	UT39A	M130199938	2017-04-02	2018-04-02
Unknown	Coaxial Cable	0.1m	C-1	Each Time	/

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	21.3 °C
Relative Humidity:	36 %
ATM Pressure:	102 kPa

The testing was performed by Harry Yang on 2018-02-02.

Test mode: Transmitting

Test Result: Complaint

1.4MHz:

Temperature	Voltage	f _L at Low Test Channel	F _H at High Test Channel	Limit
°C	V _{DC}	MHz	MHz	
0	44.4	5727.918	5847.064	f _L and f _H Within 5725~5850MHz range
10		5727.913	5847.065	
20		5727.915	5847.062	
30		5727.917	5847.066	
40		5727.911	5847.062	
25	39.96	5727.913	5847.064	
25	48.84	5727.914	5847.068	

10MHz:

Temperature	Voltage	f _L at Low Test Channel	F _H at High Test Channel	Limit
°C	V _{DC}	MHz	MHz	
0	44.4	5725.940	5849.063	f _L and f _H Within 5725~5850MHz range
10		5725.943	5849.062	
20		5725.944	5849.065	
30		5725.946	5849.066	
40		5725.945	5849.067	
25	39.96	5725.944	5849.066	
25	48.84	5725.943	5849.065	

Note: the f_L and f_H determined by 99% Occupied bandwidth low edge at Low test channel and High edge at High test channel.

******* END OF REPORT *******